



Attorney's Docket 081468-0307015
Client Reference: P-1749.000-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:
PETER TEN BERGE ET AL.

Confirmation Number: 8897

Application No.: 10/724,403

Group Art Unit: 2826

Filed: December 1, 2003

Examiner: Leonardo ANDUJAR

For: SUBSTRATE, METHOD OF PREPARING A SUBSTRATE, METHOD OF MEASUREMENT, LITHOGRAPHIC APPARATUS, DEVICE MANUFACTURING METHOD AND DEVICE MANUFACTURED THEREBY, AND MACHINE-READABLE STORAGE MEDIUM

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE/AMENDMENT TRANSMITTAL

Transmitted herewith is Response to Third Restriction Requirement and a Preliminary Amendment for this application.

FEEES

The fee for claims and extension of time (37 C.F.R. 1.16 and 1.17) has been calculated as shown below:

CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NO. PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDIT. FEE
TOTAL	29	28	1	50.00
INDEP.	8	8	0	0.00
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM				0.00
TOTAL ADDITIONAL CLAIM FEE				50.00
GRAND TOTAL				50.00

FEE PAYMENT

Authorization is hereby made to charge the amount of \$50.00 to Deposit Account No. 033975. Charge any additional fees required by this paper or credit any overpayment in the manner authorized above. A duplicate of this paper is attached.

Date: August 10, 2006

PILLSBURY WINTHROP SHAW PITTMAN LLP
P.O. Box 10500
McLean, VA 22102
703 770.7710



GUILLERMO E. BAEZA
Reg. No. 35056

Attorney Docket: 081468/0307015
Client Reference: P-1749.000 -US



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:
TEN BERGE et al.

Confirmation Number: 8897

Application No.: 10/724,403

Group Art Unit: 2826

Filed: December 1, 2003

Examiner: Leonardo ANDUIJAR

Title: SUBSTRATE, METHOD OF PREPARING A SUBSTRATE, METHOD OF MEASUREMENT, LITHOGRAPHIC APPARATUS, DEVICE MANUFACTURING METHOD AND DEVICE MANUFACTURED THEREBY, AND MACHINE-READABLE STORAGE MEDIUM

RESPONSE TO THIRD RESTRICTION REQUIREMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This responds, with traverse, to the Third Restriction Requirement (dated July 11, 2006) in connection with the above-identified patent application.

THE FIRST RESTRICTION REQUIREMENT

The Examiner made a first requirement for restriction on December 8, 2005 between the following groups of claims:

- Group I. Claims 1-24, drawn to a method of preparing a substrate; and
- Group II. Claims 26-28, drawn to a substrate having alignment marks.

PREVIOUS ELECTION

In order to comply with the First Restriction Requirement, Applicants elected to prosecute Group I, directed to claims 1-24, and reserved the right to file a Divisional

08/11/2006 SDENB081 00000139 033975 10724403

01 FC:1202 50.00 DA

application directed to the non-elected claims at a later date, if so desired. The election was made without traverse in a response filed on January 4, 2006.

THE SECOND RESTRICTION REQUIREMENT

The Examiner made a second requirement for restriction on March 27, 2006 between the following groups of claims:

- Group I. Claims 1-11, which according to the Examiner, are drawn to a method of preparing a substrate; and
- Group II. Claims 12-15, which according to the Examiner, are drawn to a method of determining an orientation of a crystal axis of a substrate.

RESPONSE TO SECOND RESTRICTION REQUIREMENT

The second restriction requirement was improper because it failed to consider all of the claims pending in the present application. Applicants traversed and respectfully requested withdrawal of the second restriction requirement. The Examiner withdrew the second restriction requirement and issued a third restriction requirement.

THE THIRD RESTRICTION REQUIREMENT

The Examiner made the third requirement for restriction on July 11, 2006 among the following groups of claims:

- Group I. Claims 1-11, drawn to a method of preparing a substrate, and 16-21 directed to a device manufacturing method.
- Group II. Claims 12-15, drawn to a method of determining an orientation of a crystal axis of a substrate,
- Group III. Claims 22-24, drawn to a lithographic apparatus,

Group IV. Claim 25, drawn to a data storage medium, and

Group V. Claims 26-28, drawn to a substrate having alignment marks.

In addition, within Group I, the Examiner required election between the following two Species:

Species 1 Claims 1-7, which according to the Examiner, are directed to a method of preparing a substrate wherein the orientations of the alignment mark were obtained by exposing the substrate to a plurality of images having different orientations.

Species 2 Claims 16-21, which according to the Examiner, are directed to a device manufacturing method wherein the marks are obtained by using a patterned beam.

The Examiner stated that claims 8-11 “appear to be generic for species 1.”

RESPONSE TO THIRD RESTRICTION REQUIREMENT

For compliance with 37 C.F.R. 1.143, Applicants **provisionally elect, with traverse,** Group I, directed to claims 1-11, and Species 1, directed to claims 1-7.

Applicants respectfully traverse the third restriction requirement because it fails to comply with M.P.E.P. §803. In particular, it is respectfully submitted that claims 1-28 in this application may be searched and examined without a serious burden. M.P.E.P. §803 states: “If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions.” (Underlining emphasis added)

Notably, the claims in non-elected Groups II-V include features that overlap in subject matter with features recited in the claims of provisionally elected Group I. In

addition, the claims in non-elected Species 2 include features that overlap in subject matter with features recited in the claims of the provisionally elected Species 1.

Claim 1 in elected Species 1 in Group I, for example, recites “exposing a substrate with a plurality of images, each of the plurality of images having a different orientation with respect to a crystal axis of the substrate” and “anisotropically etching the substrate to form a plurality of alignment markers, a location of at least a portion of each of the plurality of alignment markers substantially coinciding with a location of a corresponding portion of a corresponding one of the plurality of images.”

Claim 11 in non-elected Species 2 similarly recites alignment markers which are provided according to claim 8 so that they have a different orientation relative to a crystal axis of the substrate and which are provided according to claim 11 using an anisotropic etching process to etch the alignment markers onto the substrate. In view of the substantial overlap, it is respectfully submitted that examination of both species in one application would not be a serious burden for the Examiner.

Similarly, claim 12 in non-elected Group II recites a method of determining an orientation of a crystal axis of a substrate, according to which the substrate has provided thereon a plurality of alignment markers and each of the alignment markers has a different orientation relative to a crystal axis of the substrate.

Claim 22 in non-elected Group III similarly recites a lithographic apparatus having, among other things, a control system that controls orientation based on information indicative of an orientation of a crystal axis of a substrate, wherein that information is determined from a plurality of alignment markers on the substrate or another substrate cut from the same crystal.

Claim 25 in non-elected Group IV recites a data storage medium. The data storage medium includes a set of instructions. The instructions define a method of determining an

orientation of a crystal axis of a substrate, the substrate having provided thereon a plurality of alignment markers, and each of the alignment markers having a different orientation relative to a crystal axis of the substrate. The method carried out by the instructions in claim 25 clearly overlaps with the features recited in the claims corresponding to the other Groups.

Claim 26 in non-elected Group V recites (similarly to substrate in the method of claim 1 in elected Species 1 of Group I) a substrate comprising a plurality of alignment markers having a different orientation with respect to a crystal axis of the substrate, wherein the orientation of each of the plurality of alignment markers is within four degrees of the orientation of each other one of the plurality of alignment markers.

In view of the substantial overlap in subject matter, it is respectfully submitted that the search for Group I and Species 1 necessarily includes the search for Groups II-V and Species 2. As the search for Group I, Species 1 necessarily includes the search for Groups II-V and Species 2, it is respectfully submitted that the search and examination of claims 1-28 in the application can be made without a serious burden.

Applicants therefore respectfully request withdrawal of the third restriction requirement and examination on the merits of claims 1-28 in this application.

Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP



Guillermo E. Baeza

Reg. No. 35,056
Tel. No. 703.770.7710
Fax No. 703.770.7901

Date: August 10, 2006
P.O. Box 10500
McLean, VA 22102
703.770.7900